UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/878,333	06/12/2001	Shozo Nagai	010743	2178

23850 7590 12/18/2002

ARMSTRONG,WESTERMAN & HATTORI, LLP
1725 K STREET, NW.
SUITE 1000
WASHINGTON, DC 20006

EXAMINER
WILKINS III, HARRY D

ART UNIT	PAPER NUMBER
1742	

DATE MAILED: 12/18/2002

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/878,333	NAGAI ET AL.	
	Examiner	Art Unit	
	Harry D Wilkins, III	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 November 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 2* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 2* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 June 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 18 November 2002 have been fully considered but they are not persuasive. Applicant has argued that:

a. Nagai et al do not teach the effect of preventing slag formation, nor attaining a high strength when brazed;

b. Stern does not teach the effect of preventing slag formation, and, thus, the purpose for adding Y in Stern is completely different to that in the present invention;

c. Stern teaches the benefit of adding Y in combination with 2.5-4.5 wt% Al;

d. Stern teaches a higher temperature brazing alloy that is not consistent with the brazing temperatures of the present invention and Nagai et al, and, thus, one skilled in the art would not have been motivated to combine the references; and,

e. One skilled in the art would not have expected success in combining Y of Stern with the alloy of Nagai et al without also adding the 2.5-4.5 wt% Al.

In response to Applicant's first argument, though Nagai et al do not teach the properties of slag formation prevention and high strength, these properties are present due to the additional elements other than Ni, Cr, P and Si, which are taught by the secondary reference, Stern.

In response to Applicant's second argument, though Stern does not teach the same reason for adding Y, It has been held, that where the prior art suggests doing

what Applicants have done, though for different reasons, an obviousness rejection still stands.

> "We think it is sufficient that the prior art clearly suggests doing what appellants have done, although an underlying explanation of exactly why this should be done, other than to obtain the expected superior beneficial results, is not taught or suggested in the cited references." *In re Gershon, Goldberg, and Neiditch* 152 USPQ 602. "A newly discovered property does not necessarily mean the product is unobvious, since this property may be inherent in the prior art." *In re Best* 195 USPQ 430; *In re Swinehart* 169 USPQ 226.

In response to Applicant's third argument, Stern teaches (see col 4, lines 31-41) that the Y enhances the high temperature capabilities, affecting the grain boundaries and stabilizing aluminum. Therefore, the enhanced properties gained by adding Y are not achieved *only* in combination with 2.5-4.5 wt% Al. Thus, it would have been obvious to one of ordinary skill in the art to have added *only* the Y as taught by Stern because Stern teaches that the effects of Y are not dependent upon Al being present.

In response to Applicant's fourth argument, though Stern teaches a brazing alloy with a high brazing temperature, the affects of Y are not dependent upon the brazing temperature of the alloy. Thus, one of ordinary skill in the art would have been motivated to add Y to the brazing alloy of Nagai et al for the purpose of high temperature corrosion resistance as taught by Stern.

In response to Applicant's fifth argument, Stern teaches (see col 4, lines 31-41) that the Y enhances the high temperature capabilities, affecting the grain boundaries and stabilizing aluminum. This means that the effects of Y on corrosion resistance are not dependent upon the presence of Al. It merely teaches that when Al is present, Y has a stabilizing effect. Therefore, the enhanced properties gained by adding Y are not achieved *only* in combination with 2.5-4.5 wt% Al and correspondingly, one of ordinary

skill in the art would have had a reasonable expectation of successfully adding Y to the alloy of Nagai et al.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 and 2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagai et al (JP 09-225679) in view of Stern (US 4,507,264).

Nagai et al teach (see claims 1-3) a Ni-base brazing alloy that contains 10-30 wt% Cr, 2-11 wt% P and 1-10 wt% Si, where P+Si is 10-13 wt%, with the balance being Ni.

The range of Cr and P+Si disclosed by Nagai et al overlaps the presently claimed range. The ranges of P and Si disclosed by Nagai et al wholly contain the claimed ranges. It would have been within the expected skill of a routineer in the art to have optimized the composition of P and Si within the disclosed range in order to achieve the best brazing properties of the alloy, such as wettability (see English abstract for support).

Nagai et al do not teach that the brazing alloy contains at least one of Al, Ca, Y and Misch metal in an amount of 0.01-0.10 wt%.

Stern teaches a Ni-base brazing alloy in the same field of endeavor as the alloy of Nagai et al. Stern teaches (see col 3, lines 16-19) that Y in brazed joints combines

with Cr and Al to form an improved microstructure that is more resistant to sulfidation and oxidation. Stern also teaches (see col 4, lines 31-41) the other effects of Y. Stern teaches (see abstract) adding 0.01-0.03 Y.

Therefore, it would have been obvious to one of ordinary skill in the art to have added Y at 0.01-0.03 wt% as taught by Stern to the alloy of Nagai et al because Stern teaches that the Y improves the alloy by making it more resistant to sulfidation and oxidation.

Regarding claim 2, the Ni-base brazing alloy of Nagai et al contains (see claims 2 and 3) less than 5 wt% Mo, less than 5 wt% Fe and less than 1 wt% Co.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry D Wilkins, III whose telephone number is 703-305-9927. The examiner can normally be reached on M-Th 6:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V King can be reached on 703-308-1146. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Harry D Wilkins, III
Examiner
Art Unit 1742

hdw
December 17, 2002

ROY KING
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700